

## EUSYLLINAE (SYLLIDAE, POLYCHAETA) FROM CUBA AND GULF OF MEXICO

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### ABSTRACT

Twenty-one species of the genera *Pionosyllis* Malmgren, 1867, *Eusyllis* Malmgren, 1867, *Syllides* Orsted, 1845, *Amblyosyllis* Grube, 1857, *Odontosyllis* Claparède, 1863 and *Opisthodonta* Langerhans, 1879 (Eusyllinae: Syllidae) principally from Cuba and also from the Gulf of Mexico are reported in this paper. The following new species are described: *Pionosyllis spinisetosa*, *P. riojai*, *P. luquei*, *P. aciculata*, *P. aciculigrossa*, *Syllides gomezi*, and *Odontosyllis luminosa*. The species *Pionosyllis divaricata* (Kieferstein, 1862), *P. lamelligera* Saint-Joseph, 1856, *Eusyllis kupfferi* Langerhans, 1879, *Amblyosyllis madeirensis* Langerhans, 1879, *A. dorsigera* Claparède, 1864, *A. algefnae* Viguier, 1886 and *Odontosyllis detecta* Augener, 1913 are new to the Caribbean and Gulf of Mexico area. The species *Pionosyllis weissmanni* Langerhans, 1879, *P. gesae* Perkins, 1981, *Eusyllis lamelligera* Marion and Bobretzky, 1875, *Syllides floridanus* Perkins, 1981 and *Odontosyllis fulgurans* (Audouin and M. Edwards, 1834) are furthermore new to the Cuban fauna. The species *Syllides* sp. and *Opisthodonta* sp. have been identified to generic level only.

This is the third paper treating syllids collected in Cuba during the "Primera Expedición Cubano-Española a la Isla de la Juventud (=Isle of Pines) y Archipiélago de los Canarreos" and elsewhere in the Caribbean Sea and Gulf of Mexico. The material from the Gulf of Mexico was collected for the U.S. Department of the Interior, Mineral Management Services, contract number AA551-CT9-35.

Types and other specimens available for study are deposited in the Museo Nacional de Ciencias Naturales de Madrid (MNCNM), Spain, United States National Museum (USNM), Washington, D.C., U.S.A. and in the author's collection. Measurements either refer to the holotype or the largest specimen studied; width was measured at the proventricular level, without cirri, parapodia or setae. Permanent microscope mounts in glycerine jelly were made of some complete specimens. Observations, drawings and measurements were made using a compound microscope with differential interference contrasts optics (Nomarsky). Drawings were made by means of a camera-lucida.

A more extensive introduction and additional information about the materials and methods have been given elsewhere (San Martín et al., 1986; San Martín, in press).

### Genus *Pionosyllis* Malmgren, 1867

*Remarks.*—*Pionosyllis* is a heterogenous, polyphyletic genus, divisible, in my opinion, into several new genera. However, a great number of species are incompletely known; it is not possible to revise the genus without a revision of all available types. For this reason, I have referred to *Pionosyllis* all species which fall within the current diagnosis of the genus, although some unrelated species or groups of species are included.

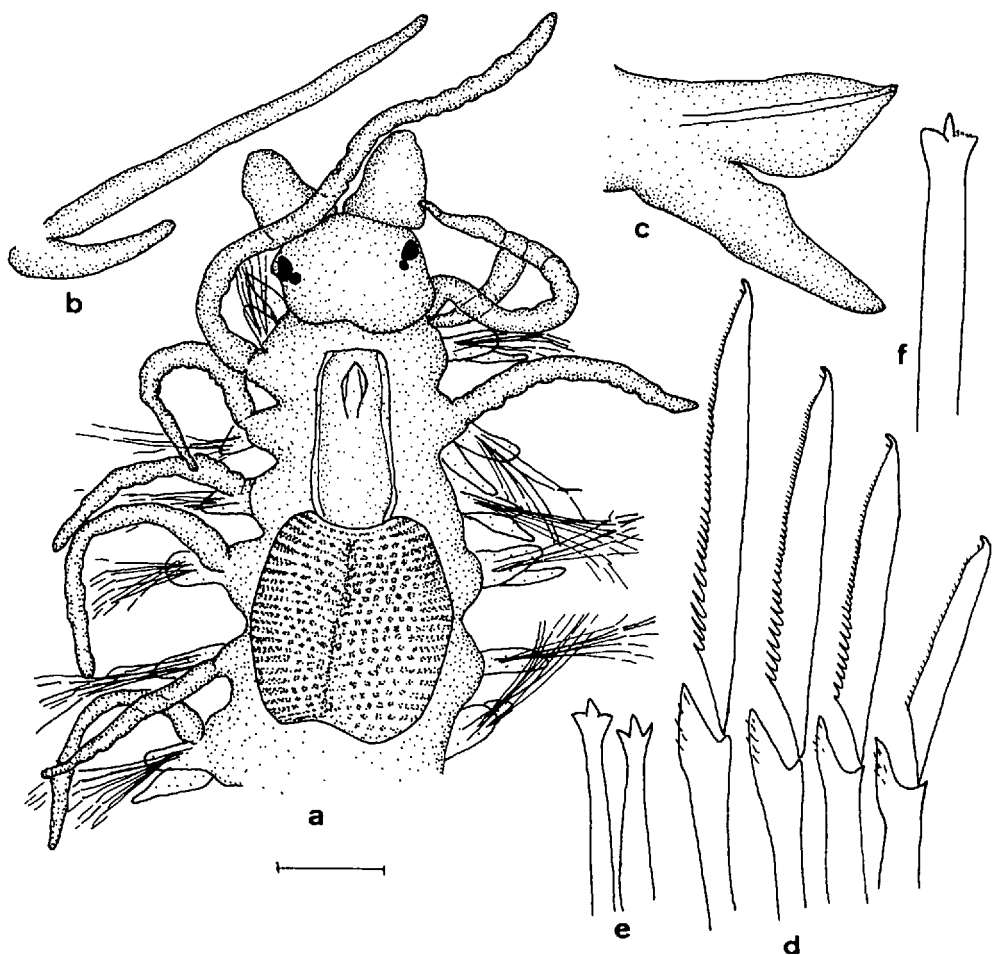


Figure 1. *Pionosyllis divaricata* (Keferstein, 1862).—a, anterior end dorsal view; b, dorsal and ventral tentacular cirri; c, parapodium, midbody; d, compound setae, midbody; e, anterior aciculae; f, posterior acicula. Scale: a, b: 64  $\mu$ m. c: 32  $\mu$ m. d, e, f: 10  $\mu$ m.

*Pionosyllis divaricata* (Keferstein, 1862)

Figure 1

Fauvel (1923), p. 287, figs. 109f–i.

Non *Pionosyllis divaricata* Haswell (1920), p. 104, pl. XIII, figs. 2–3. Non *Pionosyllis* cf. *divaricata* Hartmann-Schröder (1979), p. 78, figs. 42–44.

**Material Examined.**—Cuba: Off Punta del Francés, Isle of Pines; inside coralline rock from rubble and pavement zone; 1 m depth; 15 specimens. Off Cayo Matías, Archipiélago de los Canarreos; *Halimeda* sp.; 3 m depth; 1 specimen (MNCNM). Between Punta del Este, Isle of Pines, and Cayo Matías; *Halimeda* sp. in *Thalassia testudinum* beds; 3 m depth; 2 specimens.

**Description.**—All specimens incomplete. Prostomium pentagonal to quadrangular. Four eyes, close to one another on each lateral margin, anterior pair slightly larger than posterior pair. All specimens lack antennae. Palps triangular, broad, divergent, separate at bases; about as long as prostomium. Tentacular cirri not

articulated; dorsal ones about three times longer than ventral ones. Dorsal cirri generally not articulated, sometimes indistinctly wrinkled. Dorsal cirri irregularly alternating long and short. Parapodia long; ventral cirri conical, longer than parapodial lobes. Compound setae heterogomph, numbering about 15 per parapodium, with short spines on shaft ends; blades unidentate, somewhat hooked distally, with subterminal spine and short basal spines. Subterminal spines short except in dorsalmost setae. Marked dorso-ventral gradation in blade length from 50  $\mu\text{m}$  above to 25  $\mu\text{m}$  below; without antero-posterior gradation in shape or length of blades. Anterior parapodia each with two tricuspid aciculae; solitary acicula in all remaining parapodia. Median and posterior aciculae similar to, but thicker than anterior ones. Pharynx short, extending through 3–4 segments; pharyngeal tooth very large, rhomboidal, located on anterior third, distinctly behind anterior margin of pharynx. Proventriculus short and wide, rounded, similar in length to pharynx, with about 23–25 muscle cell rows.

*Distribution.*—European Atlantic, western Mediterranean, Madeira, Cape Verde Islands, Cuba.

*Pionosyllis spinisetosa* new species  
Figures 2 and 3

*Pionosyllis* sp. A. Uebelacker (1984), pp. 30–72, figs. 30–66.

*Material Examined.*—U.S.A.: Gulf of Mexico, MAFLA Sta. 2528, 29°54'58.6"N, 86°4'58.5"W; coarse sand; 37 m depth; holotype and 2 paratypes (USNM). Cuba: Canal de los vapores, Cayo Bocas de Alonso, Archipiélago de los Canarreos; in sponges on *Rhizophora mangle* roots; 0.5 m depth; 1 paratype (MNCNM).

*Description.*—All specimens incomplete. Body long, without color marking, 7.8 mm in length, 0.32 mm in width for 30 setigers. Prostomium oval, without eyes or eyespots. Antennae long, smooth, cylindrical; median antenna originating on posterior margin of prostomium, more than twice as long as lateral ones; lateral antennae approximately twice as long as prostomium and palps together. Palps triangular, broad, divergent, slightly longer than prostomium, free to the bases. Tentacular cirri similar in shape to antennae; dorsal tentacular cirri similar in length to lateral antennae, ventral tentacular cirri less than half as long as dorsal ones. Dorsal cirri similar in shape to antennae and tentacular cirri; all long, but alternating between long ones and very long ones; longer ones about three and one-half times body width; shorter ones about as long as body width. Parapodia long, distally bilobed. Ventral cirri digitiform, slightly longer than parapodial lobes anteriorly, much longer posteriorly. Compound setae include indistinctly bidentate spinigers with short spines and strongly bidentate falcigers with coarse spines basally and long, slender spines distally; provided with one or two very long terminal spines extending well beyond distal teeth. Both spinigers and falcigers more distinctly bidentate, with longer spines, posteriorly. Anterior parapodia each with 2–4 relatively short spinigers; each about 85  $\mu\text{m}$  in length, and about 10 falcigers showing distinct dorso-ventral gradation in length from 47  $\mu\text{m}$  above to 29  $\mu\text{m}$  below. Midbody parapodia each with 1–2 spinigers, about 105  $\mu\text{m}$  in length, and about 7 falcigers grading from 65  $\mu\text{m}$  above to 22  $\mu\text{m}$  below. Posterior parapodia each with 1 spiniger and about 4 falcigers similar to those of the midbody, but more strongly bidentate. Solitary dorsal simple setae of posterior setigers unidentate, distally rounded and provided with coarse subterminal serrations. Solitary ventral simple setae on far posterior setigers, bidentate, proximal tooth greater than distal tooth; with long subterminal spines. Anterior parapodia

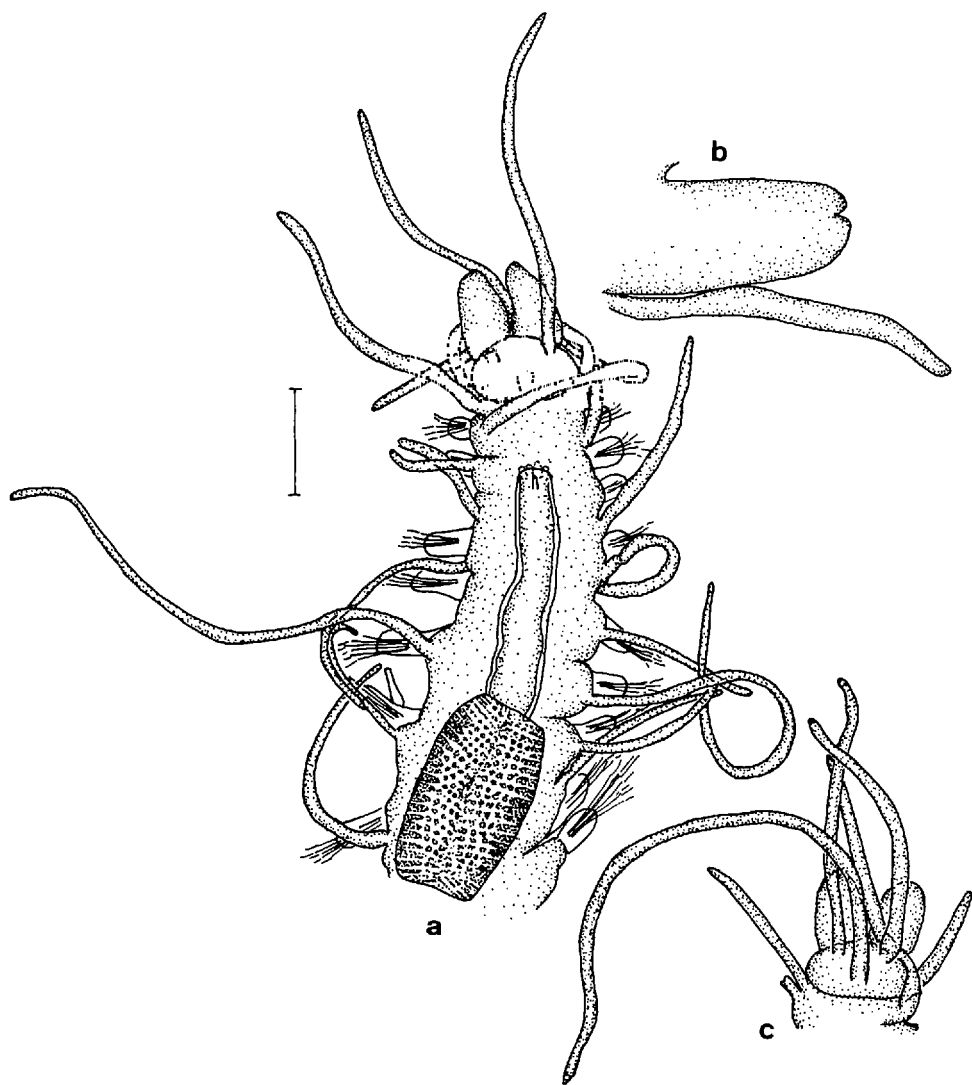


Figure 2. *Pionosyllis spinisetosa* new species—*a*, anterior end, dorsal view of holotype; *b*, posterior parapodium; *c*, prostomium and peristomium, paratype. Scale: *a*, *c*: 130  $\mu$ m. *b*: 32  $\mu$ m.

each with 2–3 aciculae; one or two straight with blunt or truncate tips; last one or two aciculae ending in two inequal lobes. Posterior setigers with only one acicula of the latter kind. Pharynx narrow, through about 4 segments, surrounded by ten soft lobes; pharyngeal tooth small, located on anterior margin. Proventriculus somewhat shorter than pharynx, with 23–30 muscle cell rows.

*Remarks.*—*Pionosyllis spinisetosa* new species is closely similar to *P. longisetosa* Hartmann-Schröder, 1965 (Hartmann-Schröder, 1965) from Chile and *P. anophthalma* Cappaccioni and San Martín, in press (Cappaccioni and San Martín, in press) from Spanish Mediterranean coasts. The three species have very similar body shape and lack eyes; in addition the shape of parapodia, aciculae and setae are very similar. However, *P. spinisetosa* differs from *P. longisetosa* in having the

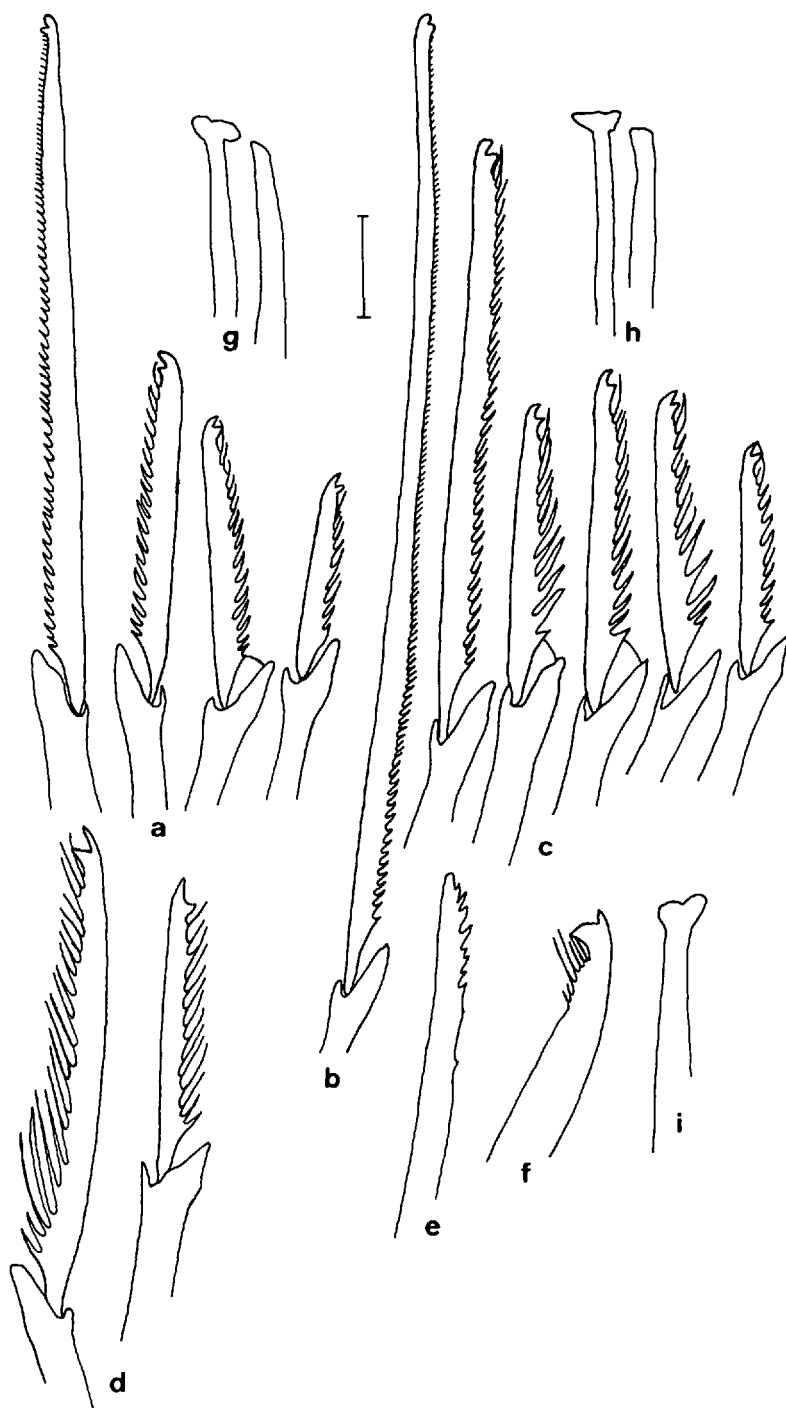


Figure 3. *Pionosyllis spinisetosa* new species—a, compound setae, anterior parapodium; b, spiniger, midbody parapodium; c, falcigers, midbody parapodium; d, compound setae, posterior parapodium; e, dorsal simple seta; f, ventral simple seta; g, anterior aciculae; h, aciculae, midbody; i, posterior acicula. Scale: 10  $\mu$ m.

blades of compound setae more strongly bidentate and provided with much longer spines. *P. spinisetosa* differs from *P. anophthalma* in having unidentate dorsal simple setae and thick, strongly bidentate ventral simple setae in which the proximal tooth is large and the subterminal spines are long. In the latter the dorsal simple setae are bidentate; the ventral simple setae are slender with both teeth similar in size and only one long, curved spine is present. Furthermore, blades of some compound setae of *P. anophthalma* have a very characteristic double curvature, lacking in those of *P. spinisetosa* n. sp.

*Etymology*.—The specific name refers to the long spines of the blades of compound setae.

*Distribution*.—Gulf of Mexico, Cuba.

*Pionosyllis weissmanni* Langerhans, 1879

Langerhans (1879), p. 546, fig. 11. Ben-Eliahu (1977), p. 50, fig. 20. Campoy (1982), p. 337, fig. XXVIIa–i. Uebelacker (1984), pp. 30–67, figs. 30–60.

*Material Examined*.—Cuba: Off Cayo Matías, Archipiélago de los Canarreos; coarse calcareous sand; 6 m depth; 1 specimen. Between Punta del Este, Isle of Pines, and Cayo Matías; inside coralline rock from rubble and pavement zone; 4 m depth; 1 specimen.

*Remarks*.—Specimens from Cuba and the Gulf of Mexico have ventral simple setae and subterminal spines, whereas the specimens from Madeira, the Mediterranean and the Red Sea have these setae provided with a subterminal hood.

*Distribution*.—Madeira, Mediterranean Sea, Red Sea, Gulf of Mexico, Cuba.

*Pionosyllis riojai* new species

Figures 4 and 5

*Material examined*.—Cuba: Off Punta Pedernales, Isle of Pines; coarse calcareous sand; 35 m depth; holotype and paratype (MNCNM). Between Punta del Este, Isle of Pines, and Cayo Matías, Archipiélago de los Canarreos; coarse calcareous sand; 18 m depth; paratype (MNCNM).

*Description*.—All specimens incomplete. Body long and slender, without color pattern, 5 mm in length, 0.2 mm in width for 35 setigers (paratype), holotype slightly shorter. Prostomium pentagonal to rectangular. Four eyes in open trapezoidal arrangement; in addition two small anterior eyespots. Median antenna originating slightly in front of posterior eyes, approximately of same length as prostomium and palps together; lateral antennae originating between anterior eyes and eyespots, approximately half as long as median antenna. Palps broad, somewhat longer than prostomium, fused for the basal third. Tentacular cirri relatively short; dorsal ones as long as median antenna, ventral ones shorter. Dorsal cirri relatively short; irregularly alternating between long and short cirri, longer ones about as long as body width, shorter ones half as long. Antennae, tentacular cirri and dorsal cirri indistinctly articulated. Cirri of posterior segments slightly longer than those of anterior segments; some with hyaline inclusions. Parapodia conical with a dorsal lobe; ventral cirri digitiform, shorter than parapodial lobes. Parapodia each with 1–2 dorsal, indistinctly bidentate compound setae; tips rounded; each with numerous long, very thin spines. In addition, 2–3 strongly bidentate compound setae in which proximal teeth are longer than distal ones with coarse, very long, distally tapering spines. Two–three compound setae are similar but provided with shorter blades, are even more strongly bidentate and have shorter and thinner spines. Blades of compound setae of midbody 20  $\mu$ m, 18  $\mu$ m and 13

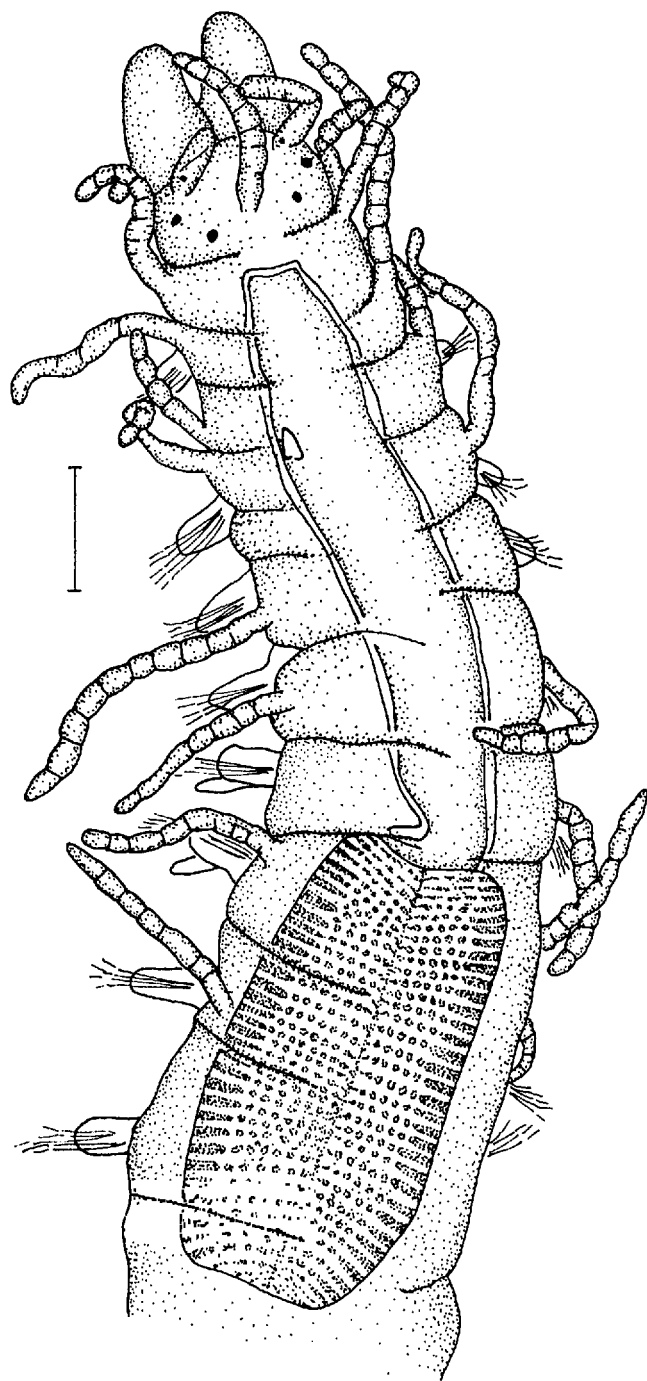


Figure 4. *Pionosyllis riojai* new species—Anterior end, dorsal view, holotype. Scale: 64  $\mu$ m.

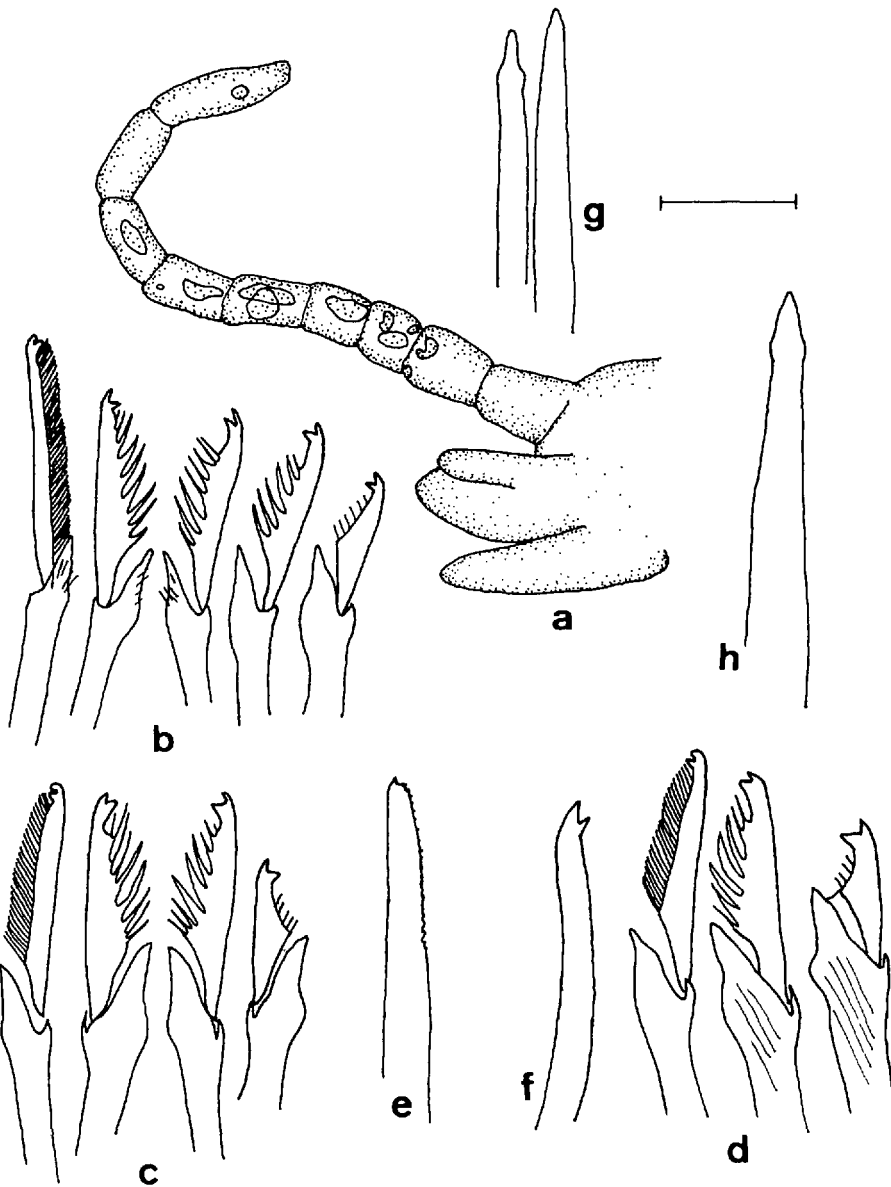


Figure 5. *Pionosyllis riojai* new species—*a*, parapodium, midbody; *b*, compound setae, anterior parapodium; *c*, compound setae, midbody parapodium; *d*, compound setae, posterior parapodium; *e*, dorsal simple seta; *f*, ventral simple seta; *g*, anterior aciculae; *h*, posterior acicula. Scale: *a*: 50  $\mu\text{m}$ . *b*, *c*, *d*, *e*, *f*, *g*, *h*: 10  $\mu\text{m}$ .

$\mu\text{m}$  long respectively. Slight antero-posterior gradation in length of blades. Solitary dorsal simple setae on posterior setigers of a paratype, straight, apparently unidentate, with a small terminal notch. Solitary ventral simple setae present in far posterior setigers of same paratype, curved, smooth, bidentate. Anterior parapodia each with two aciculae, 1 straight and other subterminally thickened; remaining parapodia each with a single thick acicula of the second kind. Parapodia each

with a dorsal, indistinct lobe, perhaps a gill. Pharynx long and narrow, extending through about 7 segments; pharyngeal tooth on anterior third, approximately at level of third segment, small, triangular. Proventriculus half as long as pharynx, with about 32 muscle cell rows.

One paratype is a mature female, with ovocytes in posterior setigers, without notoaciculæ or natatory setae.

*Remarks.*—Compound setae of *P. riojai* are similar to those of *Eusyllis homocirrata* Hartmann-Schröder, 1958 (Hartmann-Schröder, 1958; Westheide, 1974), perhaps a species of *Pionosyllis*, but the latter species lacks eyes, its dorsal cirri and antennae are not articulated, dorsal cirri are absent on setiger 2 and the pharyngeal tooth is placed at the anterior margin of the pharynx, in contrast to the state of the same feature of *P. riojai* as described above.

*Etymology.*—The species is named in honor of the late Dr. Enrique Rioja, a prominent Spanish, later Mexican expert on polychaetes.

***Pionosyllis luquei* new species**  
Figures 6 and 7

*Material examined.*—Cuba: Off Punta del Francés, Isle of Pines; inside coralline rock from rubble and pavement zone; 1 m depth; holotype and 6 paratypes (MNCNM).

*Description.*—All specimens incomplete. Body relatively long, broad, thick, fragile, 4.5 mm in length, 0.85 mm in width for 24 setigers. Prostomium quadrangular, apparently without eyes. Antennae smooth, cylindrical, shorter than prostomium and palps together; median antenna originating in middle of prostomium; lateral antennae slightly in front of median one. Tentacular cirri similar to antennae. Dorsal cirri smooth, shorter than half of body width. Parapodia conical; ventral cirri broad, somewhat foliaceous, longer than parapodial lobes. Anterior parapodia each with 3 long-bladed compound falcigers, blades 73  $\mu\text{m}$  in length, bidentate, with short spines. In addition, about 15 shorter bidentate falcigers with the proximal tooth longer than the distal one; distally somewhat hooked; each blade with slightly longer spines; dorso-ventral gradation in length from 45  $\mu\text{m}$  above to 32  $\mu\text{m}$  below; grading also in shape, proximal tooth of ventralmost setae long, curved and subterminally fused with blade. Number and length of long-bladed falcigers decreasing posteriorly; in far posterior setigers all 11 compound bidentate falcigers with both teeth hooked, similar to ventralmost setae in anterior parapodia. In midbody, long-bladed falciger 65  $\mu\text{m}$  length, and other falcigers grading from 55  $\mu\text{m}$  above to 25  $\mu\text{m}$  below. Anterior parapodia each with 4 aciculæ, 2 simple and 2 tricuspid. Number of aciculæ decreasing posteriorly to one or two thick, tricuspid aciculæ with median cusp longer and broader than lateral ones. Dorsal and ventral simple setae not seen. Pharynx long and very wide, extending through about 11 segments, surrounded by small soft lobes on anterior end; pharyngeal tooth slightly in front of pharyngeal midline. Proventriculus very wide, extending through about 5 segments, similar in length to pharynx, with about 25 muscle cell rows.

*Remarks.*—One paratype has some spots in the prostomium, which could be rudiments of eyes.

*P. luquei* and two other species which are at present being described by San Martín are closely related and present in the same area. They differ mainly in the placement of pharyngeal tooth and details in the shape of the blade tips of the

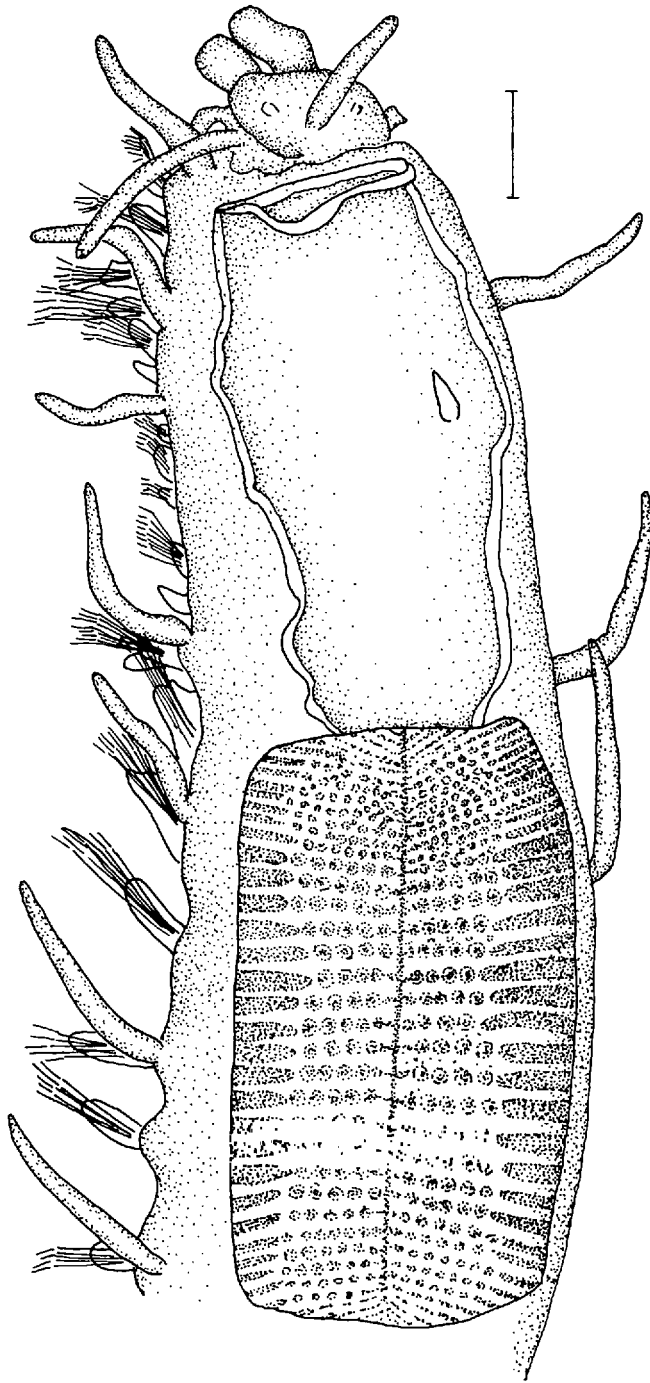


Figure 6. *Pionosyllis luquei* new species—Anterior end, dorsal view, holotype. Scale: 130  $\mu\text{m}$ .

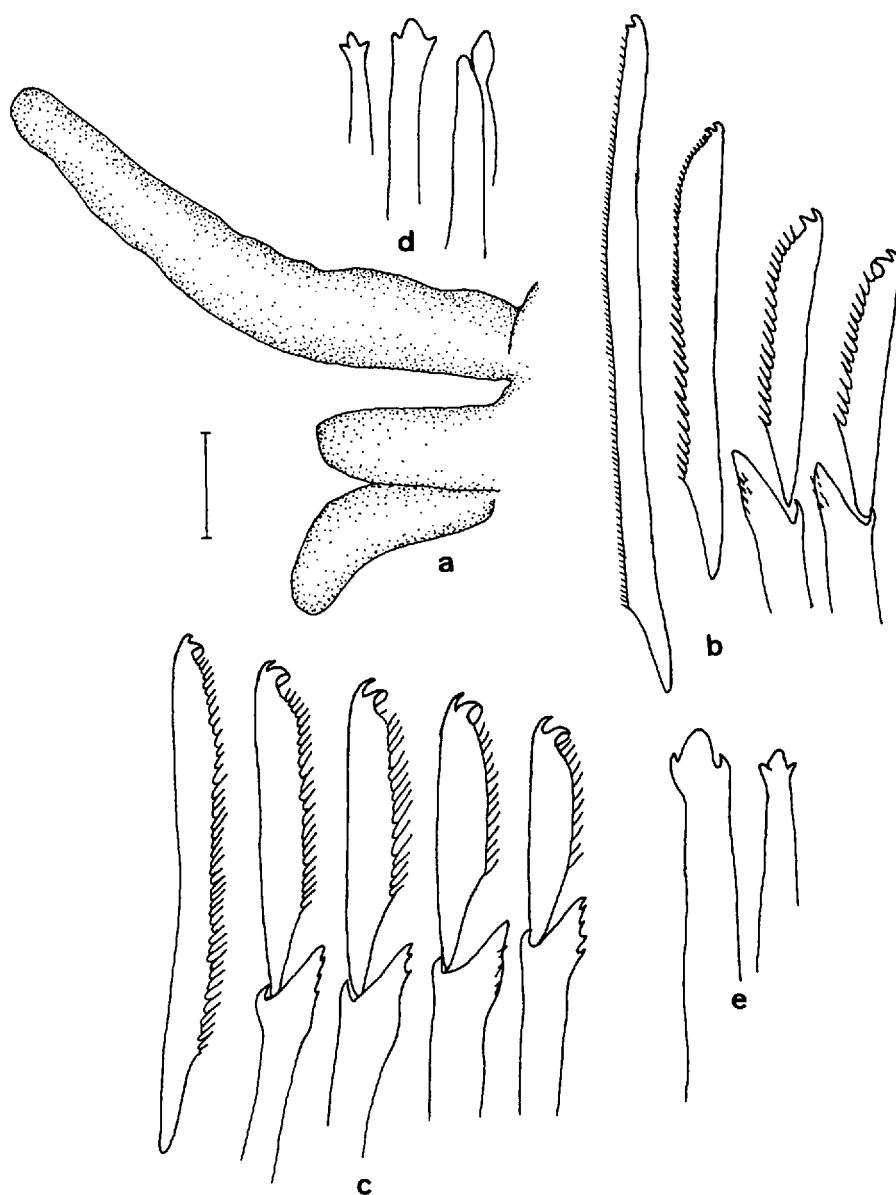


Figure 7. *Pionosyllis luquei* new species—*a*, midbody parapodium; *b*, compound setae, anterior parapodium; *c*, compound setae, midbody; *d*, anterior aciculae; *e*, midbody aciculae. Scale: *a*: 32  $\mu$ m. *b*, *c*, *d*, *e*: 10  $\mu$ m.

compound setae, but also differ in the relative lengths of antennae and cirri. They are also closely similar to *Pionosyllis morenoae* San Martín, 1984 (San Martín, 1984), but in this species the distal teeth of blades is missing in ventral and posterior compound setae.

Similar specimens have been described without specific names, as *Pionosyllis* sp. (Campoy, 1982). Specimens reported as *Pionosyllis divaricata* by Haswell 1920,

not Keferstein, and species assigned to *Eusyllis*, as *Eusyllis* sp. (Hartmann-Schöder, 1984), resemble *P. luquei* in the structure of the compound setae.

All these species have a great number of features in common, including the very characteristic shape of the distal part of the blades. However, pharyngeal teeth may be located in the beginning of the pharynx, slightly behind the front edge or even in the midline, depending on the species. All of these species are very fragile, and are known only through anterior fragments.

*Etymology.*—The species is named in honor of Dr. Angel Antonio Luque del Villar, prominent malacologist, chief of the Spanish group of the “Primera Expedición Cubano-Española a la Isla de la Juventud y Archipiélago de los Canarreos.”

*Pionosyllis lamelligera* Saint-Joseph, 1856

Fauvel (1923), p. 288, fig. 110a–g. San Martín (1984), p. 105, figs. 16, 17.

*Material Examined.*—Cuba: Between Punta del Este, Isle of Pines, and Cayo Matías, Archipiélago de los Canarreos; algae; 18 m depth; 1 specimen (MNCNM).

*Remarks.*—The single specimen found agrees with the descriptions of this species from the Mediterranean Sea.

*Distribution.*—Atlantic European coasts, Mediterranean Sea, Cuba.

*Pionosyllis aciculata* new species

Figures 8 and 9

*Material Examined.*—Cuba: Off Cayo Matías, Archipiélago de los Canarreos; *Styopodium zonale*; 3 m depth; holotype (MNCNM). Off Punta del Francés, Isle of Pines; inside coralline rock from the rubble and pavement zone; 1 m depth; 1 paratype (MNCNM). Off Cayo Matías; *Halimeda* sp.; 3 m depth; 1 paratype (MNCNM).

*Description.*—All specimens incomplete. Body long and slender, fragile, with post-proventricular segments grouped two by two, forming suprasegmental structures, without color marking, 1.32 mm in length and 0.22 mm in width for 11 setigers. Prostomium circular to oval. Four small eyes in open trapezoidal arrangement. Antennae originating on anterior margin of prostomium, median antenna slightly behind lateral antennae. Lateral antennae  $1\frac{1}{2}$  times longer than prostomium and palps together; median antenna approximately twice as long as lateral ones. Palps broad, rounded, separate at bases, divergent, shorter than prostomium. Small occipital flap, seen only in holotype. Posterior margin of prostomium ciliated. Dorsal tentacular dorsal cirri similar in shape and length to median antenna, ventral ones similar to lateral antennae. Dorsal cirri of first setiger very long, nearly twice as long as dorsal tentacular cirri. Antennae, tentacular and dorsal cirri of first setiger indistinctly articulated; articulations becoming more distinct distally. Remaining dorsal cirri not articulated, somewhat wrinkled; alternating irregularly between cirri similar in length to body width and slightly shorter ones. Parapodia rounded; ventral cirri oval, similar in length to parapodial lobes, except those of first setiger which are very large, stout, foliaceous and rounded, terminating near ventral midline of body. Compound setae heterogomph falcigers; shafts end with spines, blades relatively short, bidentate with relatively short, straight spines. Anterior parapodia each with about 10 compound setae, dorso-ventral gradation in blade length from 27  $\mu$ m dorsally to 15  $\mu$ m ventrally. Distinct antero-posterior gradation in shape of blades; in proventricular setigers, blades

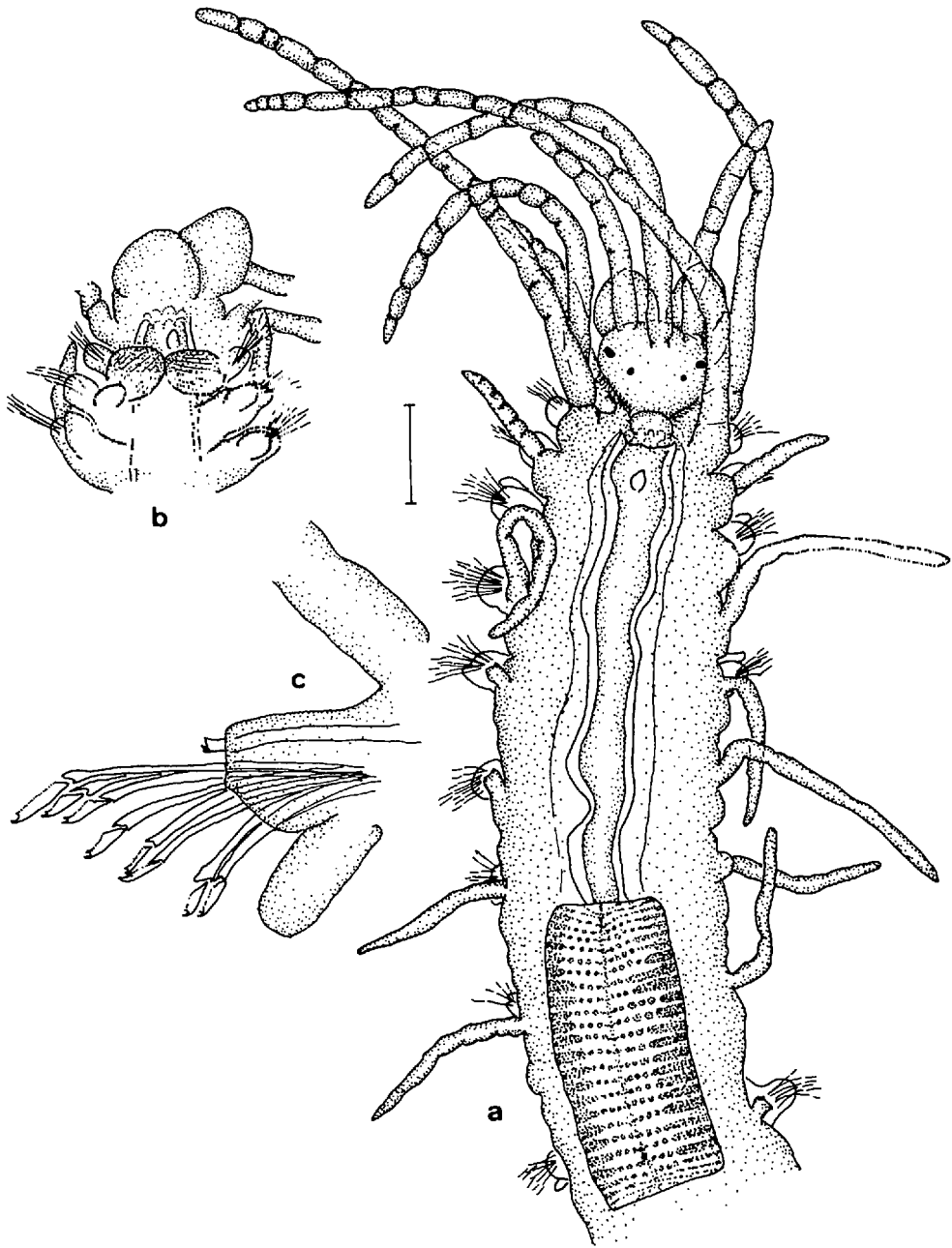


Figure 8. *Pionosyllis aciculata* new species—*a*, anterior end, dorsal view, holotype; anterior end, ventral view, paratype; *c*, medium-posterior parapodium. Scale: *a*, *b*: 64  $\mu\text{m}$ . *c*, 25  $\mu\text{m}$ .

broad, more strongly bidentate with proximal teeth longer than distal ones, spines longer and more abundant than in other parapodia. Simple dorsal and ventral setae not seen. Anterior parapodia each with two thick, tricuspid aciculae, from proventricular setigers on acicula solitary, progressively thicker, with pro-

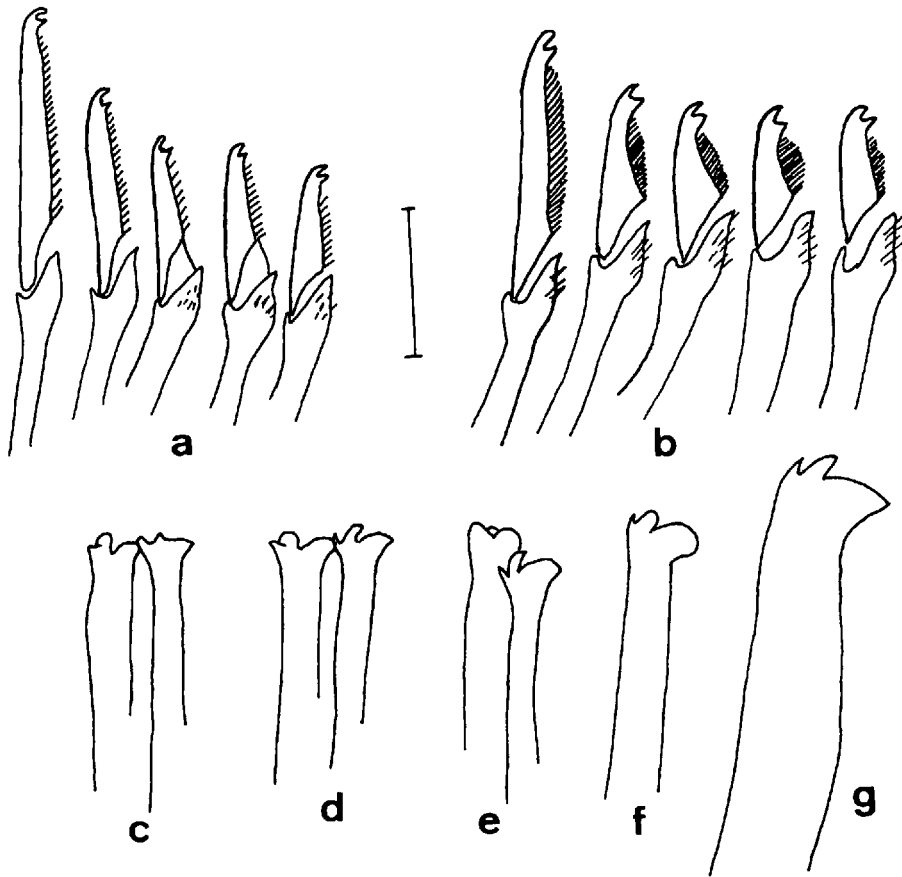


Figure 9. *Pionosyllis aciculata* new species—*a*, compound setae, anterior parapodium; *b*, compound setae, posterior parapodium; Aciculae from: *c*, first setiger; *d*, anterior parapodium; *e*, medium-anterior parapodium; *f*, medium-posterior parapodium; *g*, posterior parapodium. Scale: 10  $\mu$ m.

truding tips, becoming similar in shape to subacicular hooks in eunicids, tridentate with proximal tooth acute, long, thick, and distal tooth relatively small. Pharynx long and narrow, present through about 7 segments, opening surrounded by 10 soft lobes. Proventriculus rectangular, about half as long as pharynx, extending through two segments, with about 24 muscle cell rows.

**Remarks.**—*Pionosyllis aciculata* new species is the only species of this genus with long, enlarged aciculae protruding from median setigers, similar to the subacicular hooks of eunicids. *P. weissmanni* Langerhans, 1879 and *P. weissmannioides* Augener, 1913 (Augener, 1913) have big simple ventral setae, but not enlarged aciculae.

In general, *P. aciculata* is very similar to *P. lamelligera*; even shape of the anterior aciculae, compound setae of anterior parapodia and, especially, the foliaceous ventral cirri of the first setiger are very similar in the two species. The two species differ in the shape of median and posterior compound setae and the shape of posterior aciculae.

**Etymology.**—The specific name refers to the characteristic posterior aciculae of this species.

*Pionosyllis gesae* Perkins, 1981

Perkins (1981), p. 1105, fig. 10.

**Material Examined.**—Cuba: Off Punta Pedernales, Isle of Pines; coarse calcareous sand; 35 m depth; 10 specimens. Between Punta del Este, Isle of Pines, and Cayo Matías, Archipiélago de los Canarreos; coarse calcareous sand; 18 m depth; 4 specimens. Off Cayo Matías; coarse calcareous sand; 6 m depth; 1 specimen (MNCNM).

**Distribution.**—Florida, Gulf of Mexico, Cuba.

*Pionosyllis aciculigrossa* new species  
Figures 10 and 11

*Pionosyllis* sp. B. Uebelacker (1984), pp. 30–69, figs. 30–62.

**Material Examined.**—U.S.A.: Gulf of Mexico, MAFLA Sta. 2313, 28°23'59.3"N, 85°15'3"W; clayey, sandy silt; 177 m depth; holotype (USNM). MAFLA Sta. 2536, 29°30'2"N, 86°24'59"W; clayey silt; 189 m depth; 1 paratype (USNM). Off Port O'Connor, Florida, 27°34'N, 96°7'W; 134 m depth; 1 paratype (USNM). 26°58'N, 96°33'W; 106 m depth; 1 paratype (USNM).

**Description.**—Holotype lacking posterior end. Body cylindrical without color markings, very long, relatively slender, 11.2 mm in length, 0.5 mm in width for 67 setigers. Prostomium circular to oval. Four eyes in open trapezoidal arrangement, anterior pair larger than posterior pair. Antennae, tentacular and dorsal cirri articulated or irregularly wrinkled. Median antenna originating between anterior eyes, longer than prostomium and palps together, with 23 articles. Lateral antennae originating in front of anterior eyes, with 13 articles, similar in length to prostomium and palps together. Palps broad, triangular, longer than prostomium and completely fused along the basal third. Two well-developed, apparently un-ciliated nuchal organs present. Dorsal tentacular cirri with 15 articles, ventral ones with about 10. Dorsal cirri relatively short and slender, barely outreaching the parapodial lobes, alternating irregularly between cirri with 14 and cirri with 10–12 articles. Parapodia long and broad, dorsally rectangular; ventral cirri relatively long, digitiform. Compound setae numerous, strongly heterogomph; shafts with subterminal spines; blades long, thin, with indistinctly bidentate tips, spines short and thin. Slight antero-posterior gradation in length of blades. Marked dorso-ventral gradation in length of blades; in midbody parapodia grading from about 120  $\mu$ m above to 42  $\mu$ m below. Aciculae very thick, straight, acute, long, protuding; anterior parapodia each with 4–5 aciculae; numbers of aciculae progressively decreasing to two posteriorly; aciculae increasing in thickness posteriorly. Solitary dorsal simple setae in posterior parapodia; thin, straight, slightly serrated, unidentate. Solitary ventral simple setae in far posterior setigers; similar to dorsal ones but thicker and bidentate. Pharynx long and narrow, extending through 8 segments; opening surrounded by soft lobes; pharyngeal tooth thick, placed slightly behind anterior rim. Proventriculus shorter than pharynx, extending through about 4 segments, with about 30 muscle cell rows.

**Remarks.**—*P. aciculigrossa* n. sp. is characterized by its very thick, protuding aciculae. Only *P. aciculata* has similar aciculae, but in the latter they are solitary and tridentate. The compound setae are very different in the two species.

**Etymology.**—The specific name, from latin *grossa*, thick, refers to the unusually thick aciculae.

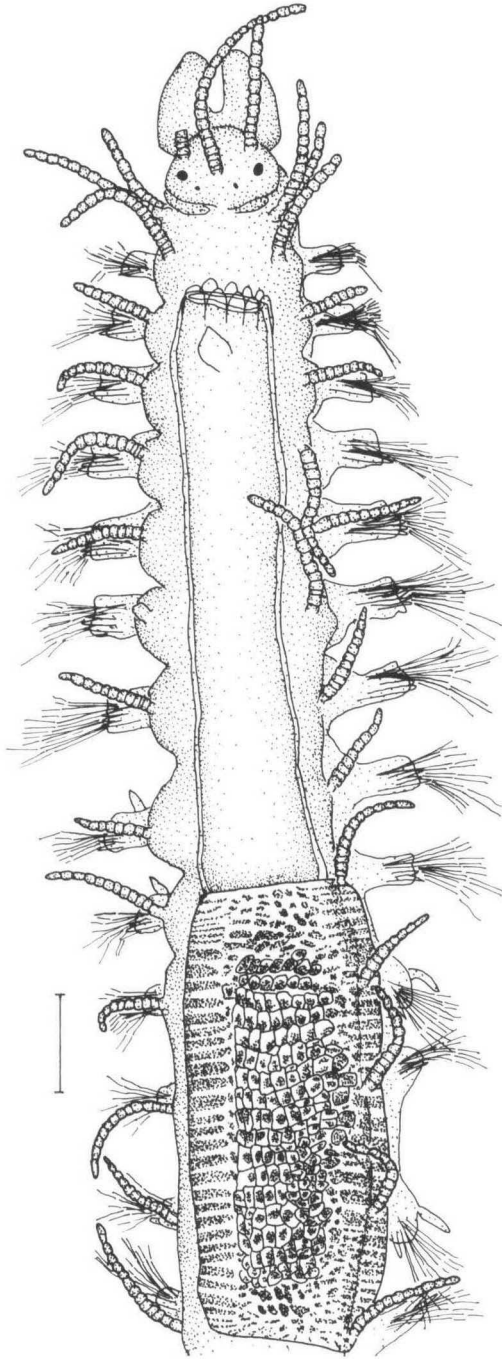


Figure 10. *Pionosyllis aciculigrossa* new species—Anterior end, dorsal view, holotype. Scale: 130  $\mu$ m.

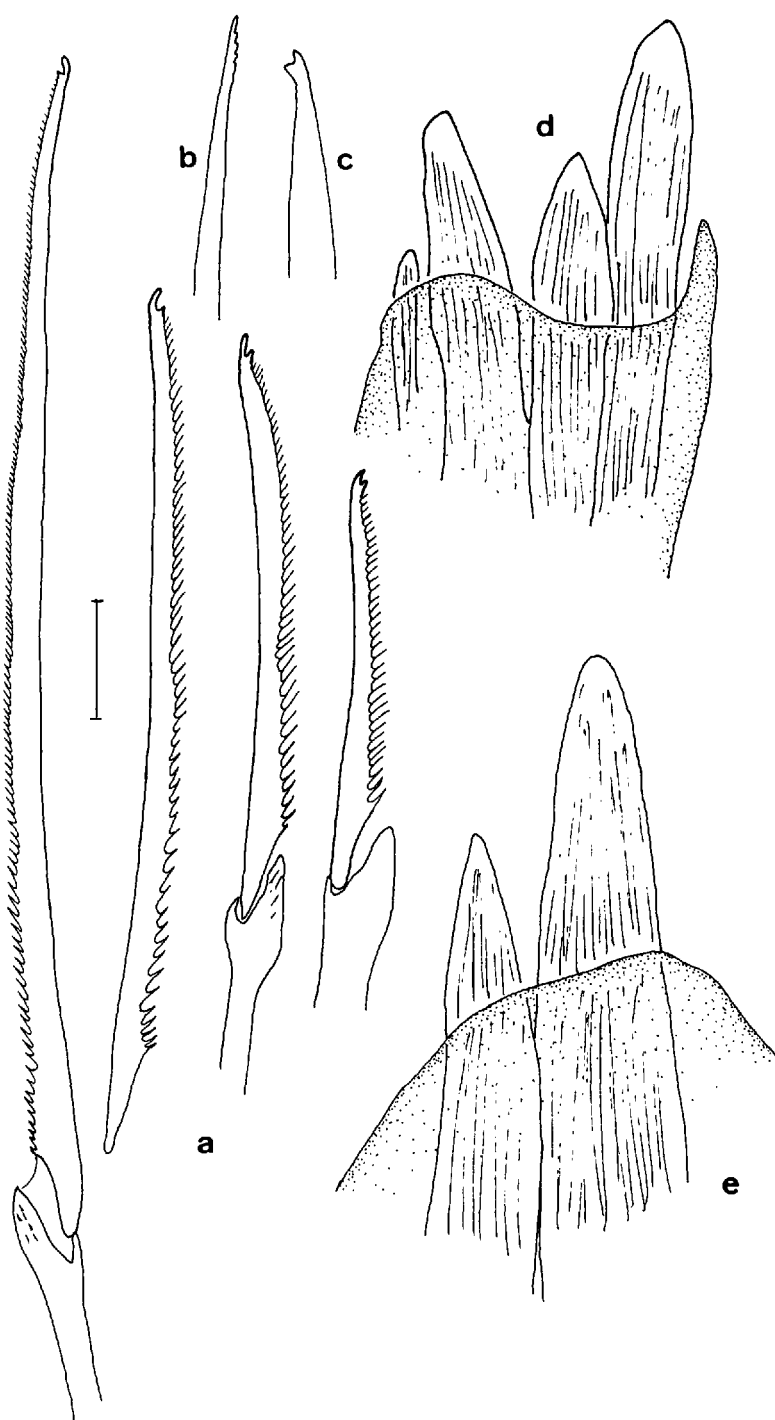


Figure 11. *Pionosyllis aciculigrossa* new species—a, compound setae, midbody; b, dorsal simple seta; c, ventral simple seta; d, aciculae and tip of parapodium, anterior; e, aciculae and tip of parapodium, posterior. Scale: 10  $\mu\text{m}$ .

Genus *Eusyllis* Malmgren, 1867*Eusyllis lamelligera* Marion and Bobretzky, 1875

Fauvel (1923), p. 294, figs. 113a–c. Pettibone (1963), p. 120, figs 33, 34a–d. San Martín (1984), p. 83, figs. 11, 12d–f.

? *Eusyllis lamelligera* Uebelacker (1984), pp. 30–79, figs. 30–74.

*Material Examined*.—Cuba: Off Punta Pedernales, Isle of Pines; inside a living coral; 1.5 m depth; 2 specimens. U.S.A.: Gulf of Mexico; MAFLA Sta. 2211, 27°56'29.5"N, 83°52'59.5"W; coarse sand; 43 m depth; 2 specimens.

*Remarks*.—The specimens from Gulf of Mexico were cited with some doubts by Uebelacker (1984) since she could not find the pharyngeal denticles in her specimens. The two specimens from Cuba have clearly defined denticles; thus the presence of this species in the area is confirmed.

*Distribution*.—European and North American Atlantic coasts, Mediterranean Sea, North Pacific, Gulf of Mexico, Cuba.

*Eusyllis kupfferi* Langerhans, 1879

## Figures 12 and 13

Langerhans (1879), p. 552, fig. 14.

*Material Examined*.—Cuba: Canal de los vapores, Cayo Bocas de Alonso, Archipiélago de los Canarreos; hydroids on *Rhizophora mangle* roots; 0.5 m depth; 5 specimens (USNM). Off Cayo Matías, Archipiélago de los Canarreos; *Halimeda* sp.; 3 m depth; 1 specimen. Between Cayo Matías and Punta del Este, Isle of Pines; *Halimeda* sp. in *Thalassia testudinum* beds; 3 m depth; 8 specimens. Same station; algae; 18 m depth; 4 specimens (MNCNM). Off Punta del Francés, Isle of Pines; algae; 4 m depth; 27 specimens.

*Description*.—Only one small complete specimen, remaining specimens incomplete. Body long, dorso-ventrally flattened, dorsally convex along median line of body, with well-marked segments, 4.5 mm in length, 0.4 mm in width for 35 setigers. The distinct color pattern includes 1–2 red transversal ribbons on each anterior segment. Prostomium pentagonal to quadrangular, big, with a nuchal notch. Four large eyes in rectangular arrangement. Antennae, tentacular and dorsal cirri fusiform, without articulations. Lateral antennae originating in front of anterior eyes, slightly longer than prostomium and palps together. Median antenna originating in middle of prostomium, approximately three times longer than lateral ones. Palps broad, relatively short, triangular, free along all their total length but very close together at the bases. Peristomium short, dorsally covered by prostomium and a fold of first setiger; dorsal tentacular cirri slightly shorter than median antenna, ventral ones similar in length to lateral antennae. Dorsal cirri of first setiger usually very long; remaining dorsal cirri irregularly alternating between cirri similar in length to half of body width, and cirri approximately  $\frac{1}{3}$  of body width. Parapodia relatively short, thick, conical; ventral cirri triangular, broad, slightly shorter than parapodial lobes. Compound setae heterogomph falcigers, shafts with subterminal spines. Blades short, hooked, with rounded tips and scarce, short, thin spines. Anterior parapodia each with two kinds of compound setae; anteriorly three, later two, and finally one seta in median parapodia, with relatively thin blades, 30  $\mu$ m in length, located dorsally. In addition about 16 compound setae with thicker and shorter blades of 22  $\mu$ m length, without dorso-ventral gradation in size or shape. Only compound setae of this kind present from post-proventricular or median setigers. Solitary dorsal simple setae, bayonet-shaped,

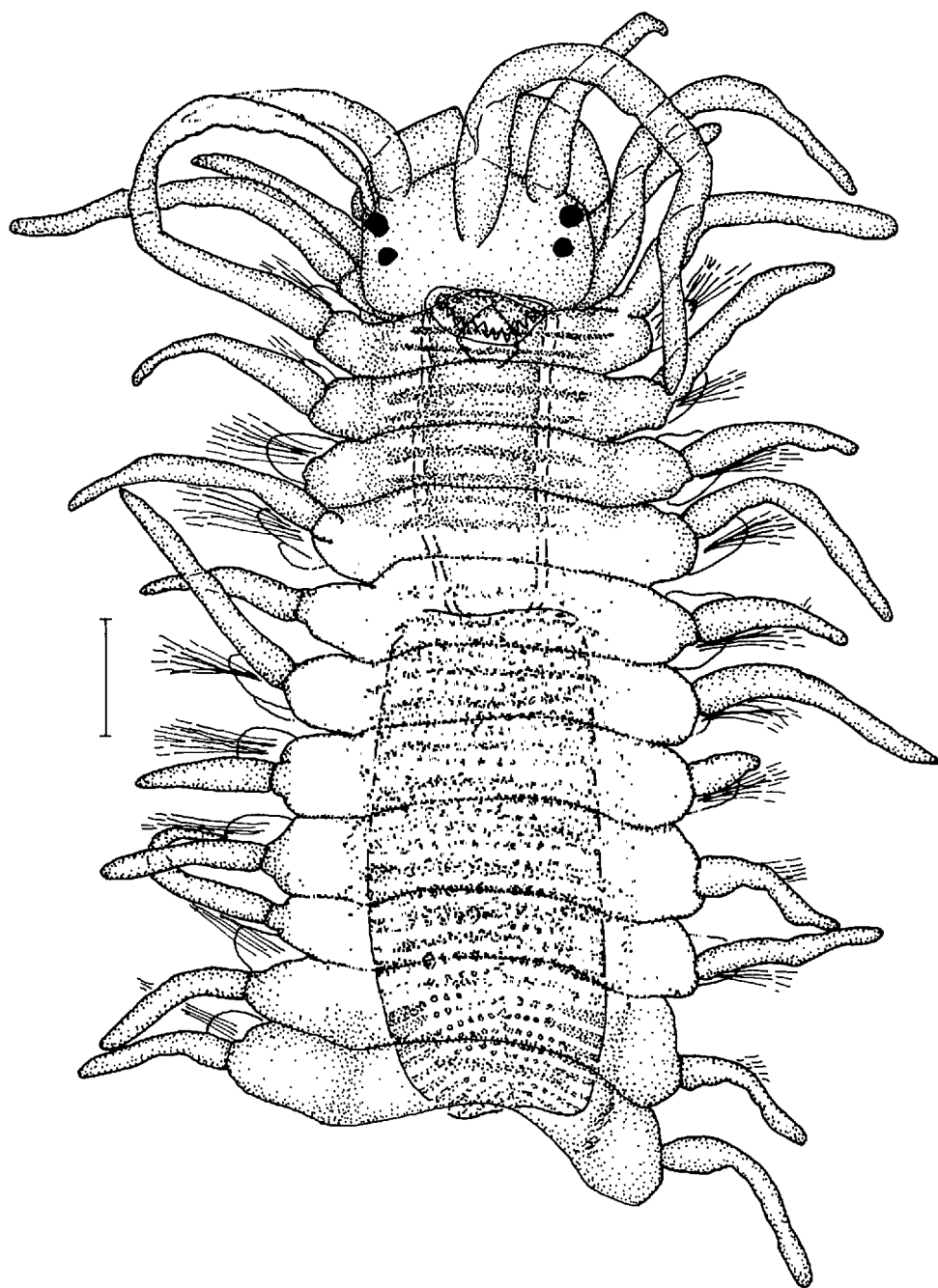


Figure 12. *Eusyllis kupfferi* Langerhans, 1879.—Anterior end, dorsal view. Scale: 64  $\mu\text{m}$ .

generally present from proventricular setigers. Ventral simple setae not seen. Acicula solitary, rounded and somewhat indented tip. Two long anal cirri. Pharynx through  $4\frac{1}{2}$ –5 segments, opening rim smooth on one side; with about 15 pointed, triangular teeth on the other side; pharyngeal middorsal tooth very large, of ap-

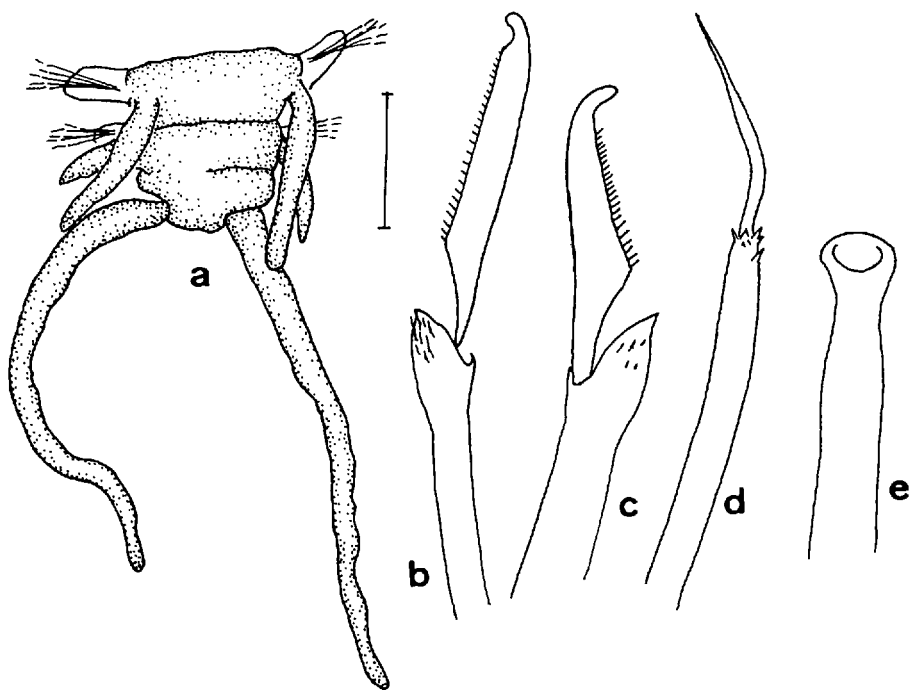


Figure 13. *Eusyllis kupfferi* Langerhans, 1879.—a, posterior end, dorsal view; b, compound setae of long blade; c, compound setae of short blade; d, dorsal simple seta; acicula, posterior parapodium. Scale: a, 64  $\mu$ m. b, c, d, e: 10  $\mu$ m.

proximately equal length and width. Proventriculus extending through about 6–6½ segments, somewhat longer than pharynx, with about 53 muscle cell rows.

*Remarks.*—This species is very similar to *Eusyllis transecta* Hartman, 1966, (Hartman 1969) from California, but that species has slightly wrinkled dorsal cirri and the dorsal simple setae appears to be different.

*Distribution.*—Madeira, Cuba.

### Genus *Syllides* Örsted, 1845

#### *Syllides floridanus* Perkins, 1981

Perkins (1981), p. 1151, figs. 31, 32. Uebelacker (1984), pp. 30–45, figs. 30–38.

*Material Examined.*—Cuba: Off Punta Pedernales, Isle of Pines; coarse calcareous sand; 35 m depth; 1 specimen.

*Distribution.*—Florida, Gulf of Mexico, Cuba.

#### *Syllides* sp.

*Syllides* sp. A. Uebelacker (1984), pp. 30–50, figs. 30–44.

*Material Examined.*—U.S.A.: Gulf of Mexico, MAFLA Sta. 2532, 29°46'N, 86°12.5'W; coarse sand; 52 m depth; 1 specimen.

*Remarks.*—This specimen probably is a new species; it is in poor condition and it was deemed better to wait to obtain more specimens.

*Syllides gomezi* new species

## Figure 14

*Material Examined.*—Cuba: Off La Herradura, N.O. from La Havana; algae; 1–3 m depth; holotype (MNCNM). Off Punta del Francés, Isle of Pines; algae; 4 m depth; 3 paratypes (MNCNM). Between Punta del Este, Isle of Pines, and Cayo Matías, Archipiélago de los Canarreos; *Halimeda* sp. in *Thalassia testudinum* beds; 3 m depth; 1 paratype (MNCNM). Off Punta Pedernales, Isle of Pines, inside living coral; 1.5 m depth; 3 paratypes (MNCNM). Off Punta del Francés; in coralline rock from rubble and pavement zone; 1 m depth; 1 specimen. Between Punta del Este and Cayo Matías; algae; 18 m depth; 1 specimen.

*Description.*—Body relatively short, broad, densely covered dorsally and ventrally by granular bright yellow inclusions, forming a wide stripe on each segment, and spreading out to prostomium, palps, parapodia, etc.; 1.72 mm in length, 0.16 mm in width for 22 setigers. Prostomium rectangular, approximately twice as wide as long. Four large eyes in open trapezoidal arrangement and sometimes two anterior eyespots. Lateral antennae originating on anterior margin of prostomium, smooth, cylindrical, similar in length to prostomium and palps together; median antenna originating in middle of prostomium, twice as long as lateral ones and similar in shape. Palps short, somewhat folded, fused along basal half. Peristomium short, well-defined, dorsally with small oval hyaline inclusions. Tentacular cirri similar in shape and length to median antenna; ventral cirri slightly shorter than dorsal ones. Dorsal cirri of two anterior setigers without articulations, those of remaining segments thick, with 8–11 spherical articles, each with 1–2 yellow-brownish inclusions. Ventral cirri long, broad, slightly longer than parapodial lobes. Compound setae similar in all setigers, heterogomph; long tine of shafts with thin, translucent hoods; hoods difficult to see in frontal view, but clearly perceptible in lateral view; blades thin, smooth or with practically imperceptible spines, minutely bidentate; numbering 10 in each medium parapodium; grading from 35  $\mu$ m in length above to 22  $\mu$ m below, somewhat longer anteriorly than posteriorly. Solitary dorsal simple setae from first setiger, thin, apparently unidentate, slightly curved, with short spines. Solitary ventral simple setae in far posterior setigers in some specimens, very thin, smooth, minutely bidentate. Pharynx unarmed; extending through about 5 segments, probably with soft lobes surrounding opening. Proventriculus short, small, slightly shorter than pharynx, with about 32 muscle cell rows. Pygidium triangular, two short, articulated anal cirri.

*Remarks.*—*Syllides gomezi* new species is the only species of this genus with a small, translucent hood on the long tine of the shafts. The species otherwise resembles *Syllides papillosus* Hartmann-Schröder, 1960 (Hartmann-Schröder, 1960) and *Syllides reishi* Dorsey, 1978 (Dorsey, 1978).

*Etymology.*—The species is named in honor of Dr. Osvaldo Gómez, Instituto de Investigaciones Marinas de la Universidad de la Habana, a prominent Cuban carcinologist, member of the Expedition.

Genus *Amblyosyllis* Grube, 1857

*Remarks.*—Identification of species in the genus *Amblyosyllis* is very complicated as demonstrated by San Martín (1984). The best character to segregate species seems to be the number and shape of the pharyngeal teeth. However, it is possible that the shape of pharyngeal teeth could change during the lifetime and that, in

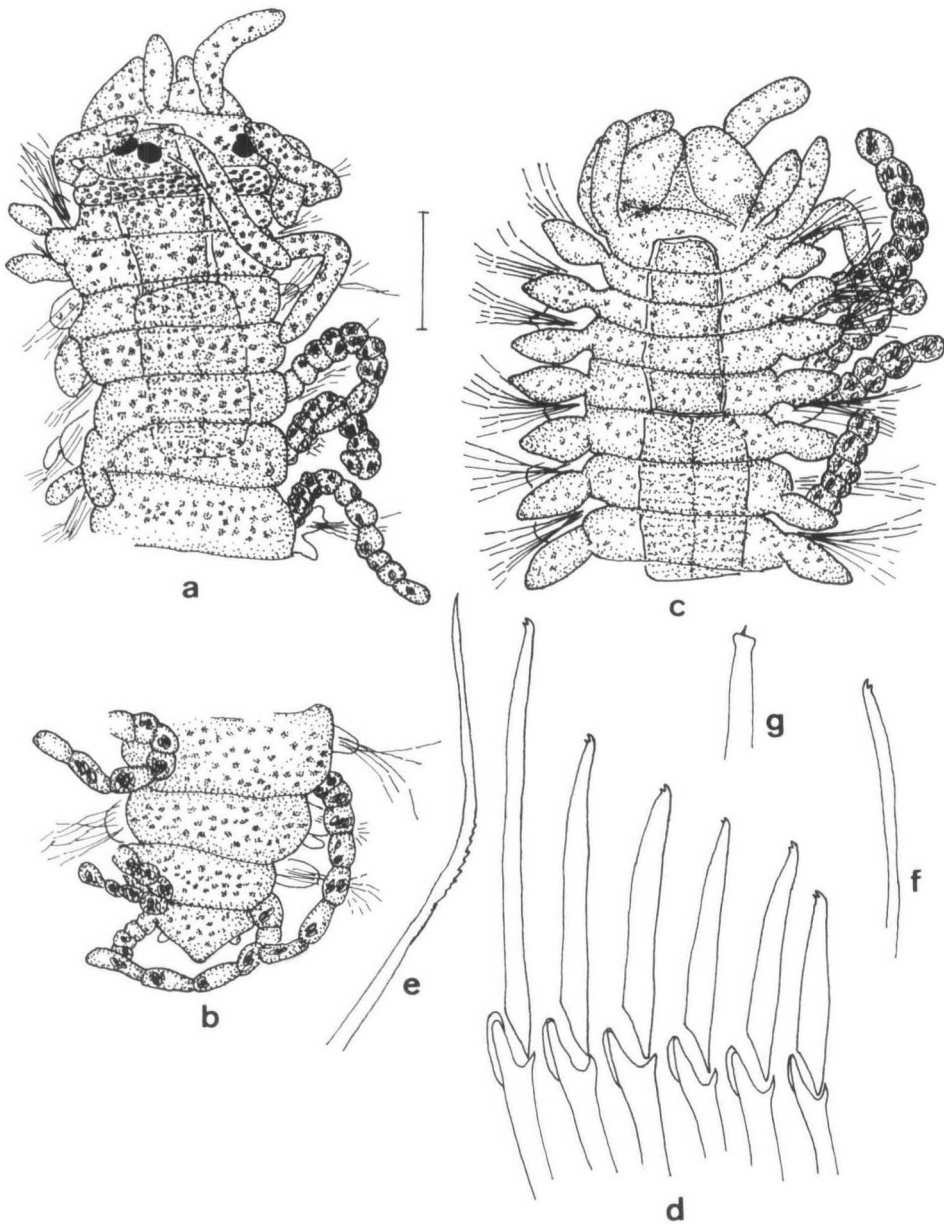


Figure 14. *Syllides gomezi* new species—*a*, anterior end, dorsal view, holotype; *b*, posterior end, dorsal view, holotype; *c*, anterior end, ventral view, paratype; *d*, compound setae, midbody; *e*, dorsal simple seta; *f*, ventral simple seta; *g*, acicula. Scale: *a*, *b*, *c*: 64  $\mu$ m. *d*, *e*, *f*, *g*: 10  $\mu$ m.

fact, some described species would represent different states of the same species; this possibility does not appear very probable at this time. All species are otherwise very similar.

In the material collected in Cuba, I have found specimens which could be assigned with some doubts to three different species.

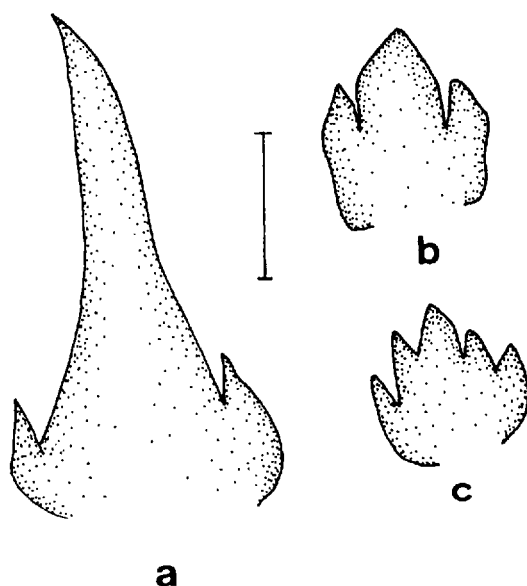


Figure 15. Pharyngeal teeth from: a, *Amblyosyllis dorsigera* Claparède, 1864; b, *A. algefnae* Viguier, 1886; c, *A. madeirensis* Langerhans, 1879. Scale: 10  $\mu\text{m}$ .

*Amblyosyllis madeirensis* Langerhans, 1879

Figure 15c

Langerhans (1879), p. 561, fig. 19. San Martín (1984), p. 68, fig. 7.

*Material Examined*.—Cuba: Off Punta Pedernales, Isle of Pines; inside living coral; 1.5 m depth; 2 specimens (MNCNM).

*Remarks*.—This species has six pentacuspoid pharyngeal teeth.

*Distribution*.—Madeira, west Mediterranean, Cuba. Probably circumtropical.

*Amblyosyllis dorsigera* Claparède, 1864

Figure 15a

Claparède (1864), p. 560, pl. VII, fig. 1. Langerhans (1879), p. 560. San Martín (1984), p. 72, figs. 8, 9.

*Material Examined*.—Cuba: Off Punta del Francés, Isle of Pines; coralline rock from rubble and pavement zone; 1 m depth; 2 specimens (MNCNM).

*Remarks*.—This species has five or six tricuspid pharyngeal teeth, with the median cusp much longer than lateral ones.

*Distribution*.—Western Mediterranean, Cuba.

*Amblyosyllis algefnae* Viguier, 1886

Figure 15b

Viguier (1886), p. 425, pl. XXVII, figs. 5–9.

*Material Examined*.—Cuba: Off Punta del Francés, Isle of Pines; coralline rock from rubble and pavement zone; 1 m depth; 5 specimens (MNCNM).

*Remarks.*—The specimens are not in good condition, but they can be differentiated from the two species listed above by having six tricuspid pharyngeal teeth, with the lateral cusps half as long as the median one.

*Distribution.*—Algiers, Cuba.

Genus *Odontosyllis* Claparède, 1863

*Odontosyllis detecta* Augener, 1913

Figure 16

Augener (1913), p. 236, pl. 3, fig. 33, text-fig. 34. Haswell (1920), p. 105. Imajima (1966), p. 103, fig. 33.

*Material Examined.*—Cuba: Between Punta del Este, Isle of Pines, and Cayo Matías, Archipiélago de los Canarreos; *Halimeda* sp. in *Thalassia testudinum* beds; 3 m depth; 1 specimen (MNCNM).

*Description.*—Specimen incomplete, 1.6 mm in length, 0.4 mm in width for 13 setigers. Specimen mature with enlarged eyes, and heavily pigmented red prostomium; with some sexual cells in posterior segments, but without natatory setae. Prostomium oval, approximately  $1\frac{1}{2}$  times as wide as long, notched posteriorly. Four enlarged eyes in open trapezoidal arrangement. Lateral antennae originating on anterior margin of prostomium, somewhat longer than prostomium and palps together. Median antenna originating slightly behind lateral ones, in front of anterior eyes; somewhat longer than lateral ones. Palps short, triangular, free to the bases. Apparently without an occipital flap. Dorsal tentacular cirri long, somewhat shorter than median antenna; ventral tentacular cirri approximately half as long as dorsal ones. Antennae, tentacular cirri and dorsal cirri without articulations. Dorsal cirri of first setiger longer than median antenna; most remaining cirri shorter than half of body width. Compound setae numbering about 14 on each parapodium. Shafts terminally spinous, blades short, strongly hooked; proximal teeth very small, sometimes nearly absent, more distinct in anterior than in posterior setigers. Without distinct dorso-ventral gradation in size or shape; blades about  $15\ \mu\text{m}$  in median parapodia. Solitary dorsal simple setae from setiger 8, thin, unidentate, subterminally with spines. Ventral simple setae not seen. Pharynx short and wide, extending from setiger 4 through setiger 6, with a trepan of 5 pointed teeth. Proventriculus broad, long, extending through  $4\frac{1}{2}$  segments; number of muscle cell rows indeterminate.

*Distribution.*—Australia, Japan, Cuba.

*Odontosyllis luminosa* new species

Figures 17, 18 and 19

*Odontosyllis* sp. A. Uebelacker (1984), pp. 30–85, figs. 30–80.

*Material Examined.*—Cuba: Off Punta de los Barcos, Isle of Pines; epitokous specimens captured during the night on the sea surface; holotype and 45 paratypes (MNCNM), 5 specimens (USNM). U.S.A.: Gulf of Mexico. MAFLA Sta. 2531; 45 m depth; coarse sand; 1 paratype (USNM), atokous specimen.

*Description.*—Body long, without color marking, robust, thick, 10 mm in length, 0.8 mm in width for 60 setigers. Prostomium oval, posteriorly bilobed. Four large eyes in open trapezoidal arrangement. Antennae originating along front edge of

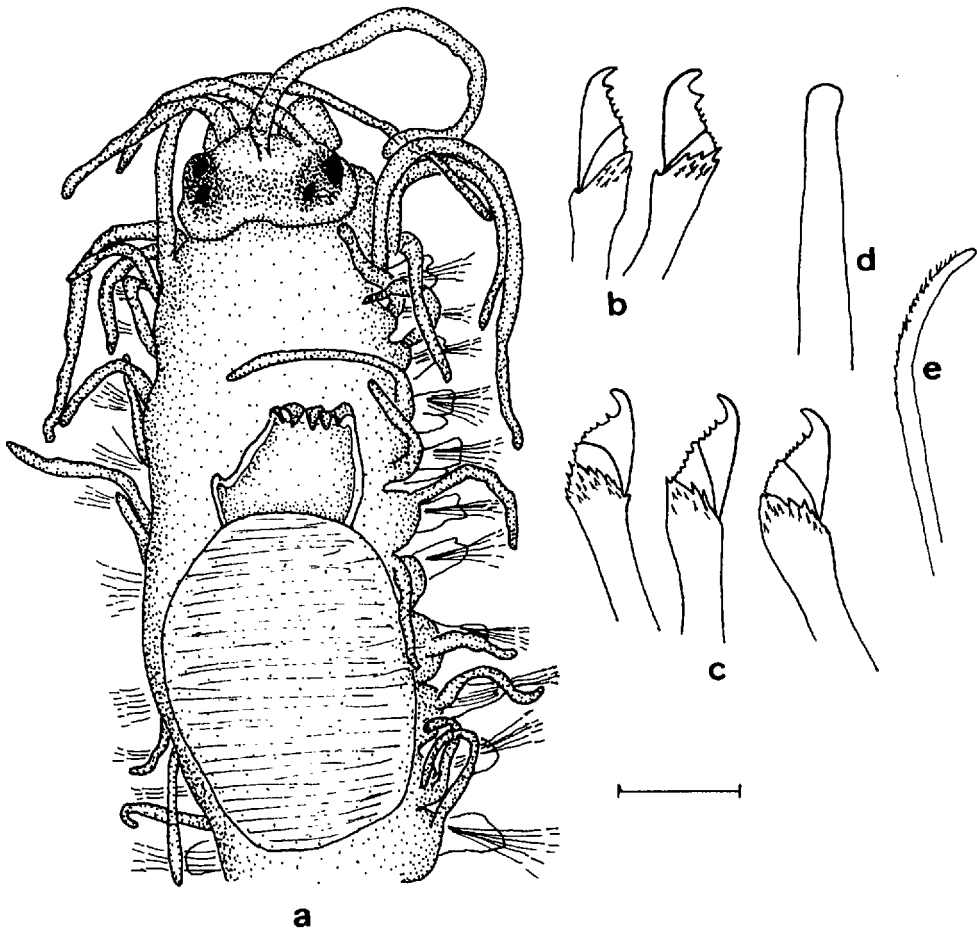


Figure 16.—*Odontosyllis detecta* Augener, 1913.—a, anterior end, dorsal view; b, compound setae, anterior parapodium; c, compound setae, midbody; d, acicula; e, dorsal simple seta. Scale: a: 130  $\mu\text{m}$ . b, c, d, e: 10  $\mu\text{m}$ .

prostomium, median one slightly behind lateral ones; median antenna more than twice as long as prostomium and palps together, lateral ones less than half as long as median one. Palps triangular, stout, similar in length to prostomium, separate at bases. Occipital flap rounded, large. Peristomium dorsally reduced, covered by first setiger. Antennae, tentacular and dorsal cirri without articulations; tentacular and dorsal cirri longer than body width anteriorly. Dorsal cirri alternating cirri long and short from proventricular level, longer ones similar in length to body width, shorter ones half of body width. Parapodia long, dorsally bilobed; ventral cirri similar in length to parapodial lobes. Compound setae strongly heterogomph falcigers, with numerous spines along long tines of shafts; blades relatively short, bidentate. On each parapodium, dorsally 3–4 compound setae with relatively slender shafts and very short blades, about 16  $\mu\text{m}$  length, with both teeth very close to each other. Remaining compound setae, numbering 8–9, with thicker shafts and longer blades, about 25  $\mu\text{m}$  length, proximal tooth placed near middle of cutting edge. Blades with few, very short spines. Sheath connecting blades and

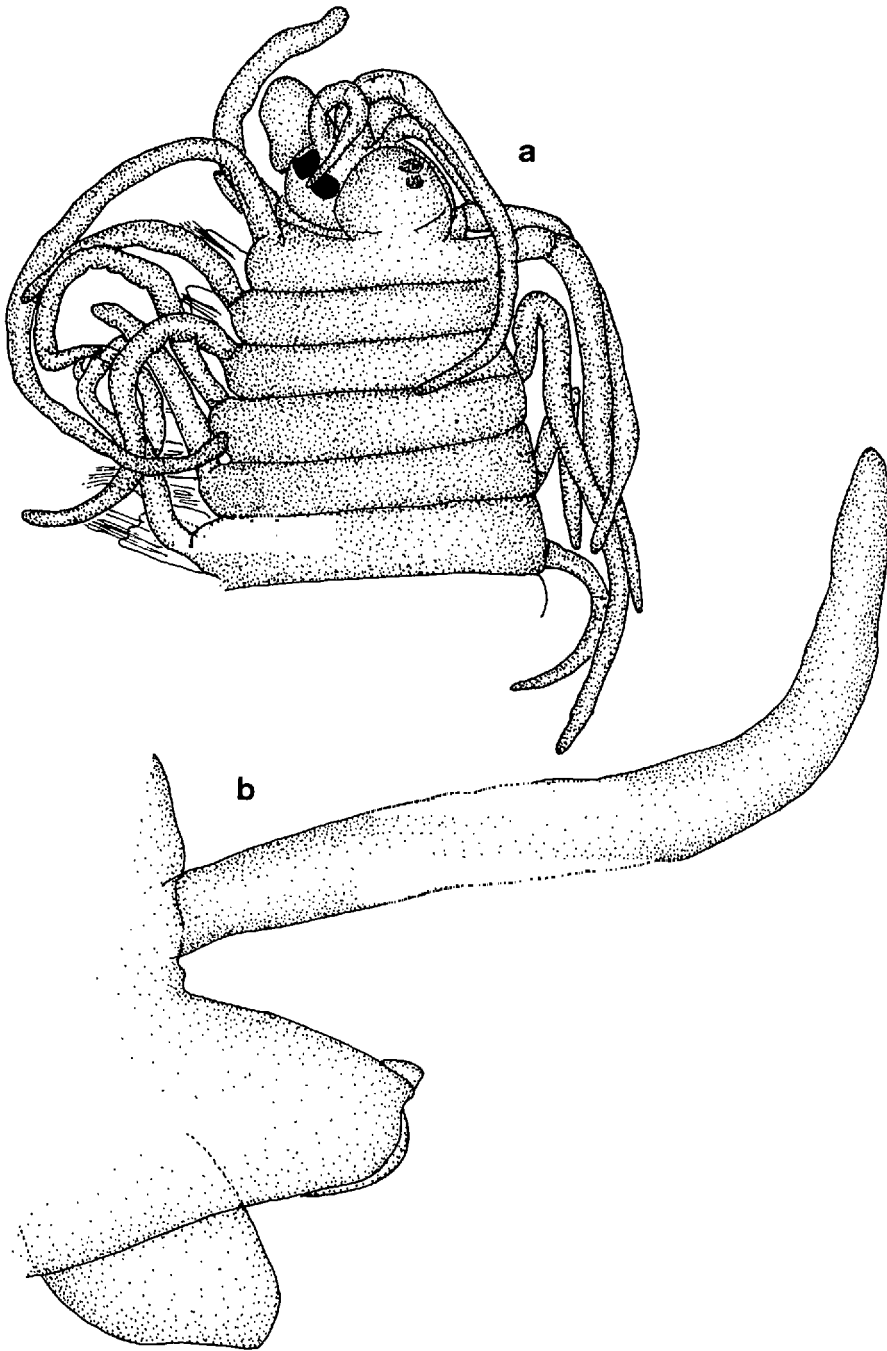


Figure 17. *Odontosyllis luminosa* new species—Atokous specimen. a, anterior end, dorsal view; c, parapodium, midbody. Scale: a: 130  $\mu\text{m}$ . b, 32  $\mu\text{m}$ .

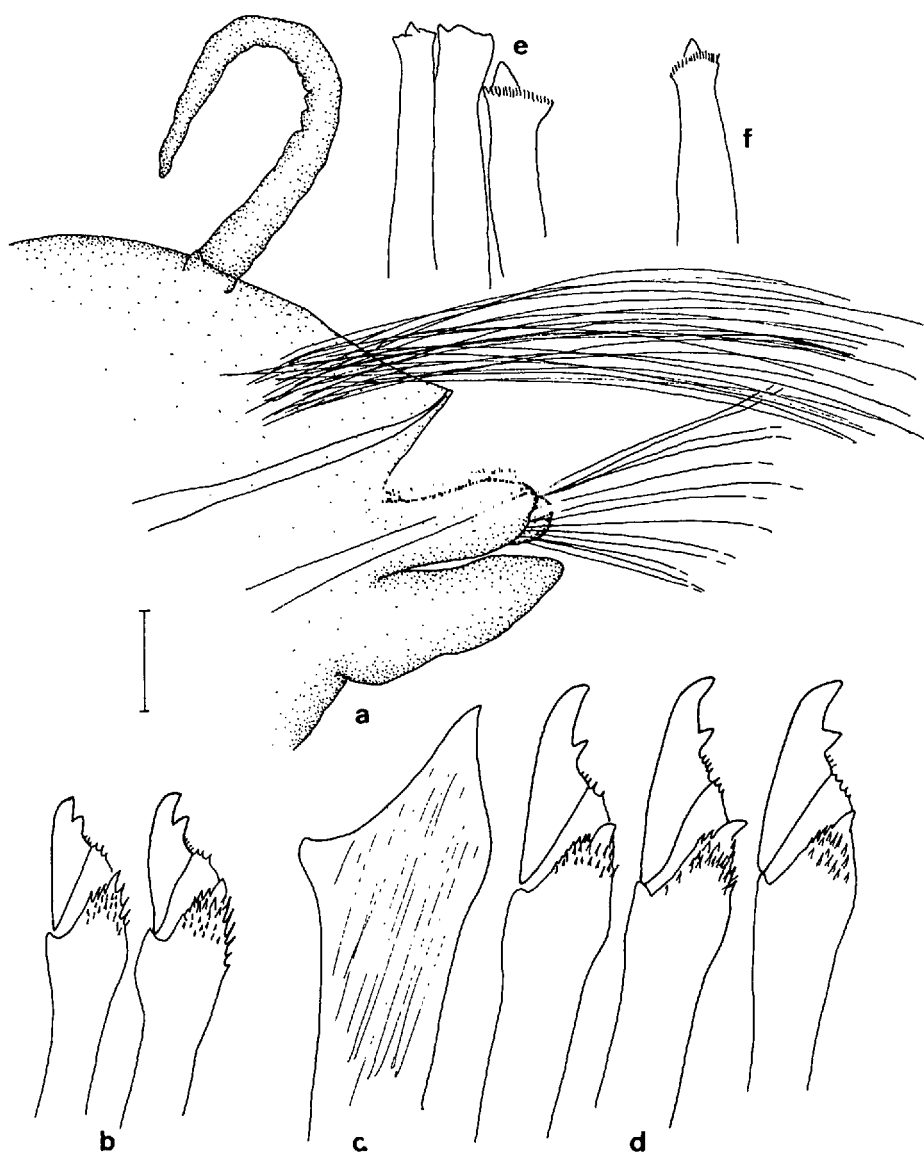


Figure 18. *Odontosyllis luminosa* new species—Epitokous specimens. a, parapodium, midbody; b, dorsal compound setae; c, special simple seta, originated by loss of blade and enlargement of shaft; d, remaining compound setae; e, aciculae, anterior parapodium; f, posterior acicula. Scale: a: 32  $\mu\text{m}$ ; b, c, d, e, f: 10  $\mu\text{m}$ .

shafts with short spines. Acicula solitary from proventricular segments, distally constricted with short spines surrounding tip; anteriorly accompanied by 2–3 similar aciculae; the latter without subterminal spines. Simple setae not seen. Pharynx very short, wide, extending from about setiger 6 to setiger 8; trepan with six curved teeth. Proventriculus very long, wide, extending from 9 to setiger 15, with about 70 muscle cell rows.

Epitokous specimens with strongly bilobed prostomium, two greatly enlarged eyes on dorsal side and two others placed ventrally but extending laterally. Pro-

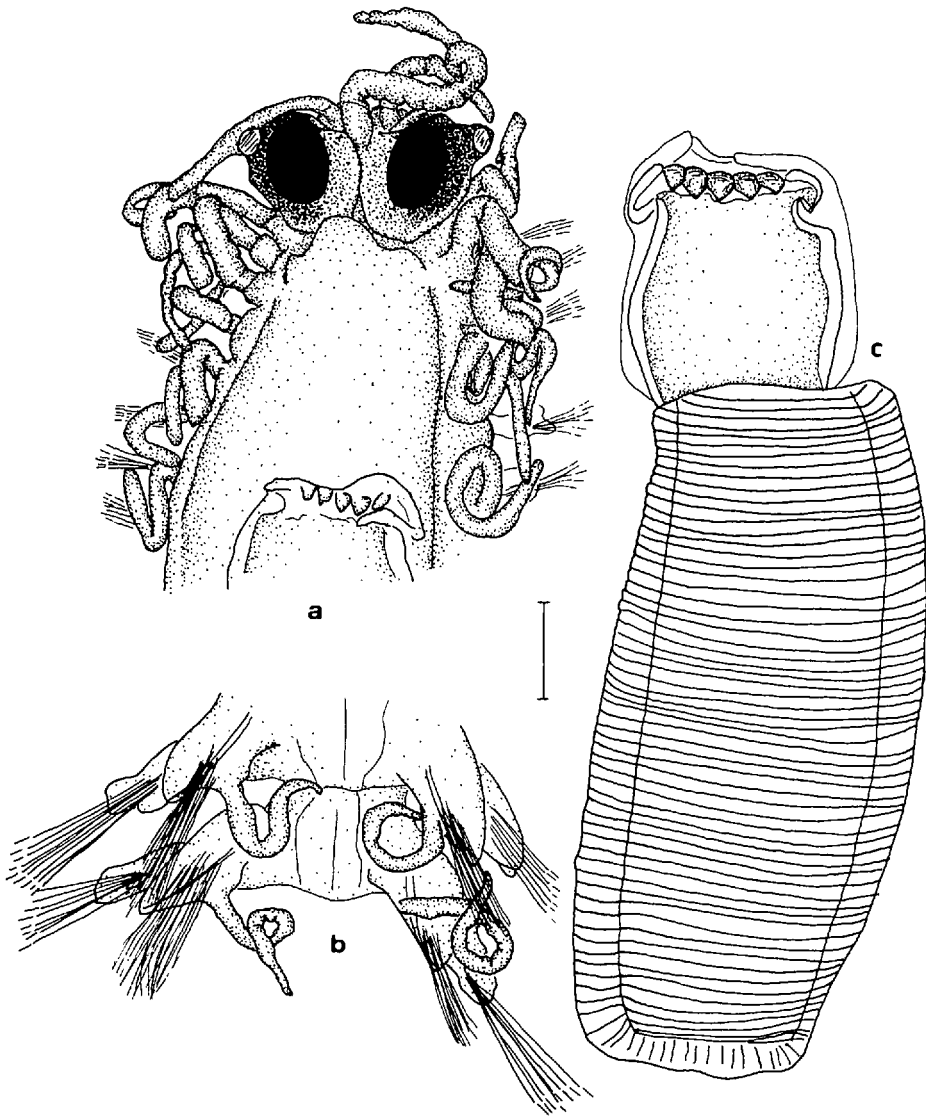


Figure 19. *Odontosyllis luminosa* new species—a, anterior end, dorsal view, holotype (epitokous); b, medium-posterior segments, atokous specimen, dorsal view; c, pharynx and proventriculus. Scale: 130  $\mu$ m.

stomium red. Palps and occipital flap reduced. Dorsal cirri held in a spiral. Parapodia biramous, provided by notoacacula and long natatory setae from setiger 22. Parapodia of modified part of body each usually with a very thick seta, smooth, without blade, forming a special simple seta. Living epitokous specimens phosphorescent.

*Remarks.*—*Odontosyllis luminosa* new species is similar to *O. fulgurans*, but *O. luminosa* has longer dorsal cirri and lacks lateral plates in the trepan. Furthermore, *O. luminosa* is very long bodied and is characterized by the presence of

dorsal compound setae with thinner shafts and shorter blades than those of the remaining setae.

*Etymology.*—The specific name refers to the great power to emit light of living epitokous specimens.

*Odontosyllis fulgurans* (Audouin and Milne Edwards, 1833)

Fauvel (1923), p. 274, figs. 103f–i. San Martín (1984), p. 93, fig. 14.

*Material Examined.*—Cuba: Off Punta del Francés, Isle of Pines; inside dead coral; 1 m depth; 41 specimens. Off La Herradura, N.O. from La Havana; algae; 1–3 m depth; 7 specimens. Off Punta Pedernales, Isle of Pines; coarse calcareous sand; 35 m depth; 1 specimen. Between Punta del Este, Isle of Pines and Cayo Matías, Archipiélago de los Canarreos; algae; 18 m depth; 8 specimens. Off Cayo Matías; *Halimeda* sp.; 3 m depth; 10 specimens. Off Punta Pedernales, Isle of Pines; inside living coral; 1.5 m depth; 11 specimens. Canal de los vapores, Cayo Bocas de Alonso, Archipiélago de los Canarreos; hydroids on *Rhizophora mangle* roots; 0.5 m depth; 5 specimens. Same station and depth; in sponges on *Rhizophora mangle* roots; 3 specimens. Between Cayo Matías and Punta del Este; *Halimeda* sp. in *Thalassia testudinum* beds; 5 specimens. Off Punta Pedernales; coarse calcareous sand; 50 m depth; 1 specimen.

*Distribution.*—“Cosmopolitan.”

Genus *Opisthodonta* Langerhans, 1879

*Opisthodonta* sp.

*Opisthodonta* sp. A. Uebelacker (1984), pp. 30–62, figs. 30–56.

*Material Examined.*—U.S.A.: Gulf of Mexico, MAFLA Sta. 2645, 29°35'0.5"N, 87°20'2.2"W; coarse sand; 106 m depth; 3 specimens. MAFLA Sta. 2211, 27°56'29.5"N, 83°52'59.5"W; coarse sand; 43 m depth; 2 specimens. MAFLA Sta. 2207, 27°57'0.4"N, 83°9'0.3"W; fine–very fine sand; 19 m depth; 2 specimens. MAFLA Sta. 2528, 29°54'58.6"N, 86°4'58.5"W; coarse sand; 37 m depth; 4 specimens. MAFLA Sta. 2315, 28°33'59.1"N, 84°20'9.1"W; silty fine sand; 38 m depth; 2 specimens. MAFLA Sta. 2422, 29°30'N, 84°27'W; medium fine sand; 24 m depth; 1 specimen. MAFLA Sta. 2533, 29°42'59.9"N, 85°15'28.6"W; coarse sand; 67 m depth; 1 specimen. Cuba: Between Punta del Este, Isle of Pines, and Cayo Matías, Archipiélago de los Canarreos; in coralline rock from rubble and pavement zone; 4 m depth; 3 specimens. Off Cayo Matías; *Halimeda* sp.; 3 m depth; 1 specimen.

*Remarks.*—These specimens probably belong to a new species, currently being described by another author.

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